Epidemiology of urethral stricture at Tygerberg Hospital

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Abstract **Over a 12-month period, 120 consecutive male patients with confirmed urethral stricture were prospectively studied with regard to the epidemiology of the disease. Specific urethritis is the main aetiological factor (45%) and internal and external trauma account for an alarming 38,3% of cases. The prevalence is highest among 40 - 50-year-old coloured men who have had little schooling, multiple sexual partners and who have a low annual income. The incidence can be reduced by upliftment of moral and educational standards of the local population, and by emphasising the potential dangers of catheterisation and instrumentation to medical personnel.**

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Urethritis[1] and iatrogenic internal urethral trauma[2] are the most common causes of urethral stricture, but there is considerable variation in the frequency of the possible aetiological factors.

Urethral stricture is common in the western Cape. Approximately 100 - 120 new cases are seen yearly at Tygerberg Hospital. Although much has been published on urethral stricture disease, no definite data on its epidemiology are available.

The aim of this study was to gain precise information on the who, when, where and why of the disease in our community in order to reduce the incidence in the future.

Patients and methods

From January to December 1991, 120 consecutive male patients with confirmed urethral stricture were prospectively evaluated in our department. All patients were personally interviewed with regard to personal background, relevant previous medical history, family history, marital status, sexual and social behaviour, religion, academic qualification, occupation and income. *T*-tests were used to assess continuous variables and χ^2-tests categorical data. A *P*-value less than 0,05 was considered significant.

Results

Of the 120 patients, 80,8% were coloured, 11,7% white and only 7,5% black; this reflects the population referred to our department.

The age distribution is shown in Fig. 1. The mean age was 50,9 years with a range of 3 - 88 years. There was a statistically significant difference ($P = 0,013$) between the mean ages of the different ethnic groups. The oldest population were the whites, with a mean age of 62,6 years, and the youngest the blacks, with a mean of 42,6 years.

FIG. 1.
Age distribution in the ethnic groups.

Fifty-three per cent (53%) of patients were married, 34% unmarried, 7,5% widowers and 5,5% divorced. Among the 114 sexually active patients, the mean number of partners was 4,6 with a range of 1 - 25. The mean number of children per patient was 2,9 with a range of 0 - 12. Twenty-four patients had fathered no children.

Sixty-five (54,2%) of the patients had received less than 5 years of schooling, 39,2% 6 - 10 years, and only 6,6% more than 10 years of schooling (Fig. 2). Fifty-eight per cent (58%) of the coloured and 67% of the black group had had less than 5 years of schooling. Of the patients with more than 10 years' schooling, 75% were white.

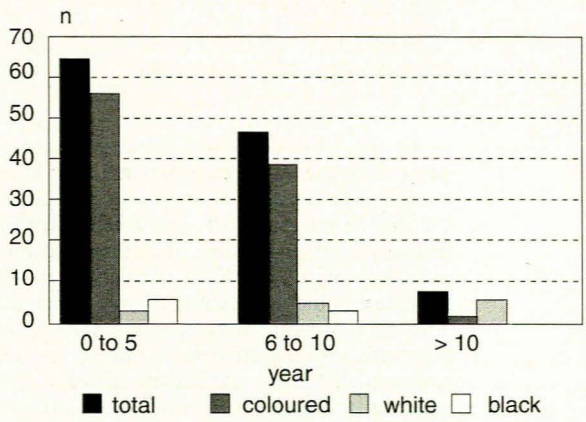

FIG. 2.
Years of schooling in the different groups.

Labourers accounted for 53,3% of the stricture population (Fig. 3). Of these 57,8% were unskilled. Sixteen per cent of the pensioners were receiving a disability pension because of an unrelated disease.

The average annual income was R5 000, with a range of R0 - R60 000. Seventy-seven patients (64,2%) received less than R5 000 per year and 15% of the patients had no income.

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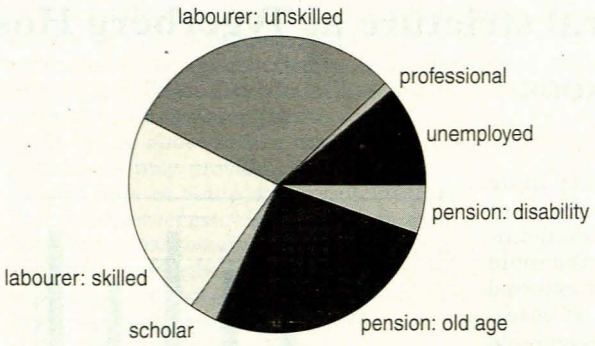

FIG. 3.
Occupations of patients with urethral stricture.

Thirty-four patients did not use tobacco, alcohol and drugs. However, 64 smoked, 62 drank alcohol and 12 were drug abusers. There was no association between religious beliefs and stricture formation.

The aetiology of the strictures is shown in Table I. Twenty-eight per cent of patients with a history of urethritis were between 41 and 50 years old (range 19 - 77). Only 22,6% of patients who had had only 1 sexual partner gave a history of urethritis, while 73,1% of those with more than 5 partners had a positive history ($P < 0,001$). Sixty-five per cent of patients in this group had an annual income of less than R5 000. Forty of the 86 patients who smoked and/or used alcohol and/or drugs gave a history of urethritis. This was not statistically significant when compared with the 41,2% of patients who had urethritis and who neither smoked nor used alcohol or drugs.

TABLE I.
Aetiology of 120 strictures

	Total		Coloured		White		Black	
	No.	%	No.	%	No.	%	No.	%
Urethritis	54	45,0	48	49,5	2	14,3	4	44,4
Trauma								
External	34	28,3	27	27,8	2	14,3	5	55,6
Internal	12	10,0	7	7,2	5	35,7	0	
Unknown	20	16,7	15	15,5	5	35,7	0	

Of the 34 patients with external trauma, pelvic fractures were the cause in 6 patients, straddle injury in 15 patients and perineal injury due to assault in 13 patients. Of the 13 patients who gave a history of a previous transurethral procedure or catheterisation, 75% were over 60 years of age. Sixty per cent of patients in whom no cause could be identified were older than 60 years. The time interval between apparent cause and presentation with urethral stricture is shown in Table II. There was a statistically significant difference between the internal trauma group and both the post-infective ($0,001 < P < 0,01$) and external trauma ($P < 0,001$) groups.

TABLE II.
Time interval between apparent cause and appearance of stricture disease

	Mean (years)	Range
Post infective	21,44	6 months - 66 years
External trauma*	20,29	3 months - 64 years
Internal trauma	7,02	3 months - 18 years

* Pelvic fractures excluded.

Sixty-nine patients (57,5%) presented with symptoms of outflow obstruction, 36 (30%) with acute urinary retention and 14 (11,7%) with other complications. One patient who presented with a ureteric calculus was incidentally found to have a stricture on cystoscopy. Seventy per cent of patients with complications had an annual income of less than R5 000 (not statistically significant) and 56% had received less than 5 years of schooling (not statistically significant).

Discussion

One hundred and twenty consecutive patients with confirmed urethral stricture treated in the Department of Urology at Tygerberg Hospital over a 1-year period were the subjects of this prospective study. Although it was predicted by many authors that because of effective therapy of urethritis and better knowledge of the pathogenesis, urethral stricture would disappear as a clinical entity,[3,4] it remains a common disease at Tygerberg Hospital. Urethritis was the main aetiological factor (45%) in this study. Internal (10%) and external trauma (28,3%) account for an alarming 38,3% of cases. In our experience the latter type of injury is usually related to a high intake of alcohol. The time interval between the apparent cause and presentation differs distinctly: 7,0 years for internal trauma, and 20,3 years and 21,4 years respectively for external trauma (excluding pelvic fractures) and post-infective strictures.

Simple dilatation or internal urethrotomy is not always a quick and effective way of treating a patient.[4] Extensive and recurrent strictures need costly surgical treatment. Many patients present with serious complications, e.g. para-urethral abscess, necrotising fasciitis and chronic renal failure.[5] They receive lengthy hospital care, disability pensions and undergo multiple surgical procedures.

The incidence of urethral strictures in our community and elsewhere can and must be reduced by upliftment of moral and, where applicable, educational standards of the population, and also by emphasising the potential dangers of catheterisation and instrumentation to medical personnel.

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